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Spotted star light curve numerical modeling technique and its application to HII 1883 surface imaging

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Abstract

We developed a code for imaging the surfaces of spotted stars by a set of circular spots with a uniform temperature distribution. The flux from the spotted surface is computed by partitioning the spots into elementary areas. The code takes into account the passing of spots behind the visible stellar limb, limb darkening, and overlapping of spots. Modeling of light curves includes the use of recent results of the theory of stellar atmospheres needed to take into account the temperature dependence of flux intensity and limb darkening coefficients. The search for spot parameters is based on the analysis of several light curves obtained in different photometric bands. We test our technique by applying it to HII 1883. © 2014 Pleiades Publishing, Ltd.

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Keywords

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